

September 5, 2000

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TO: Commissioner of Patents and Trademarks
Washington, D.C. 20231

Fr: George O. Saile, Reg. No. 19,572
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Subject:

Serial No. 09/587,465 06/05/00

Jing-Cheng Lin

METHOD OF IMPROVED BARRIER
PERFORMANCE

Grp. Art Unit:

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation
In An Application.

The following Patents and/or Publications are submitted to
comply with the duty of disclosure under CFR 1.97-1.99 and
37 CFR 1.56. Copies of each document is included herewith.

U.S. Patent 5,801,098 to Fiordalice et al., "Method of
Decreasing Resistivity in an Electrically Conductive Layer",
describes a method of decreasing resistivity in an electrically
conductive, diffusion barrier layer of TiN, that includes the
use of a high density plasma sputtering technique to deposit
the electrically conductive TiN layer.

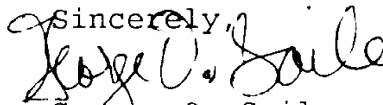
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TECHNICAL ROOM

U.S. Patent 6,001,415 to Nogami et al., "Via with Barrier Layer for Impeding Diffusion of Conductive Material from Via into Insulator", describes a method of forming various diffusion barrier layers, i.e., both pure WSiN and pure WN barrier layers, for conducting copper contact vias.

U.S. Patent 5,968,333 to Nogami et al., "Method of Electroplating a Copper or Copper Alloy Interconnect", describes a process whereby copper or a copper alloy is electroplated to fill via/contact holes and/or trenches in a dielectric layer.

U.S. Patent 5,907,188 to Nakajima et al., "Semiconductor Device with Conductive Oxidation Preventing Film and Method for Manufacturing the Same", describes a semiconductor device that includes a semiconductor substrate, and a laminated film insulatively formed over the semiconductor substrate.

U.S. Patent 5,985,762 to Geffken et al., "Method of Forming a Self-Aligned Copper Diffusion Barrier in Vias", describes a process whereby a copper diffusion barrier is formed on the side walls of vias connected to copper conductors, to prevent copper diffusion into inter-level dielectric.

Sincerely,

George O. Saile,
Reg. No. 19572